A PHASE OF THE EXTERNAL STATISTICAL NEEDS OF AMERICAN BUSINESS.*

By Earle Clark

There is an increasing demand on the part of business executives for statistics concerning general economic, social, and political conditions which affect the interests of business organizations. Statistics of this kind, used for business purposes, may be described as "external business statistics," as distinguished from "internal business statistics," which consist in a quantitative analysis of the accounts and affairs of an individual commercial or industrial concern.

For statistics relating to general conditions, the business world is largely dependent upon the official statisticians of the federal and state governments. One urgent statistical need of American business consists in an extension of the work done by governmental agencies which is useful to business. This need has been described and emphasized by Mr. William A. Hathaway, in a paper appearing in the current number of this Quarterly.

It is the purpose of the present paper to show that private business interests should take part in some statistical activities which have heretofore been left to the statisticians of governmental bureaus and commissions. The need for this work is due to the connection which exists between the statistical activities of the government and the welfare of business organizations. The work to be done consists, in brief, in the scrutiny, verification, and, in some instances, amplification of official statistics by the statisticians of business concerns.

I. A GOVERNMENT BUREAU OF STATISTICAL ADMINISTRATION, RESEARCH, AND ANALYSIS.

Because of its evident bearing upon the production and interpretation of statistics affecting business interests, a suggestion made by Mr. Hathaway, in the paper referred to above, will be commented upon at the beginning of the present dis-

* Paper read at the seventy-ninth Annual Meeting of the American Statistical Association.

cussion. Mr. Hathaway recommends, as a means of serving an urgent statistical need of business, the creation of a federal bureau to be charged with supervising, supplementing, and interpreting official statistics. There are obstacles to the creation of such a bureau, but they are not insuperable, and the work of such an organization should be of value, not only to private business interests, but to the entire public. It may be well to give examples of the tasks that such a bureau should assume, and also to mention a danger to be avoided.

Examples of Tasks to Be Assumed.—One of the first functions to be exercised by the proposed organization should be that of harmonizing the statistical work of the different government bureaus and commissions. The United States has a tariff system which was created in the interest of our manufacturing industries. Even when the tariff schedules are revised with emphasis on their revenue producing features, the interests of industry must be, and are, considered. We have statistics of imports and of revenues, and also statistics of manufactures, but the two groups of statistics are wholly independent and, for the most part, cannot be reconciled. It may not be possible to take a census of manufactures with all the detail as to products adopted in a tariff schedule, but a bureau of the kind Mr. Hathaway recommends should seek to have the broader groupings of one mass of data made comparable with the groupings of the other.

Another task for a bureau of research is the elimination of duplication in gathering statistics. Anyone who has collected information upon government schedules has probably had the experience of being assured by a manufacturer that he is ready to give the facts asked for, but that he gave these same facts to another representative of the government about a month before, and similar facts to a third representative within the half year.

The illustrations just cited are not novel ones; they relate to needs generally recognized by statisticians. To emphasize them and repeat them may assist in bringing about an improvement in conditions.

A Danger to Be Provided Against.—In creating a bureau for the coördination and interpretation of official statistics, it

would be necessary to provide against a development that might seriously impair its usefulness. Such an organization must possess, if it is to be efficient, large statistical powers; it must be able to commandeer data from a number of sources; and its statisticians must have free hand in selecting the methods to be used in assembling and interpreting statistics. The conclusions of the bureau would appear to have behind them all the authority of the government. By reason of this concentration of power and authority it is conceivable that some of the findings of the bureau might be accepted for more than they were really worth. To say this is not to reflect upon the quality of the work that would be done, nor the qualifications of the statisticians who would do it. But no statistician is infallible. That the statisticians would seek to exaggerate the importance of their results is not probable, but it is possible that the public would be inclined to accept findings of the bureau at their face value, without much inquiry as to the facts and reasoning on which they were based.

The private agencies which endeavor to interpret economic statistics presumably make mistakes, but business is not dependent on the output of any one organization. The results of one agency can be checked by those of another. If faith is lost in one organization, it can be discarded for others. And when different organizations, proceeding independently, reach the same conclusions, these conclusions have additional weight. In the interpretation of economic statistics, competition is desirable.

The remedy for the danger referred to consists in the presentation, by the interpreting bureau, of its original data, together with a full and clear statement as to the methods by which conclusions are reached. If such statements were made, methods and results could be checked, and would be checked, by the representatives of private business enterprises.

II. A NEW FIELD FOR BUSINESS STATISTICS.

Consideration of the statistical work on the part of business organizations that is made necessary or expedient by the statistical activities of the Government involves: (1) a statement of the basis of the need for work of this kind, (2) a broad class-

ification of the work according to both (a) the processes employed and (b) methods of presentation, and (3) a consideration of the relation of the work to the interests of the public.

Basis of Need for Work.—The need for statistical activity of the type mentioned has its source in the effects of governmental authority upon business enterprises. In times of war, government control is more evident than usual; price fixing, for example, is a relatively new extension of governmental power; but at all times the influence of what is done by the state and federal authorities greatly exceeds what would commonly be described as government regulation of business. Thus, the enactment of a tariff law is not, in the accepted sense, government regulation, but such a law may result in a marked change in the conditions under which industry works. Business interests are affected, also, by revenue laws and by legislation adopted in the interest of wage earners and of the public, as, for example, laws fixing the hours of labor, laws regulating the employment of women and minors, minimum wage laws, factory inspection laws, and laws providing for the inspection of manufactured products. Railway rate making is a form of government activity which affects, not only the railroads, but all phases of business life.

Legislation of this kind is based, in increasing measure, upon the results of statistical inquiries, studies, and investigations, carried on by commissions, bureaus, councils, public and private, of varying statistical competency. Our statistical libraries largely consist of reports of investigations which have been authorized in order that they might serve as the basis for legislation, and which have in many cases been fruitful of legislative results. The list includes, for example, the reports of state and federal commissions on industrial relations, the minimum wage, immigration, etc. Moreover, in formulating and debating laws, reference is constantly made to bodies of existing data, such as the reports of the Bureau of the Census and other permanent government offices. Revenue laws and tariff laws are enacted with reference to statistics gathered and compiled for the purpose, or drawn from existing sources.

It follows that the interests of business are directly affected by the quality and amount of the statistical work done by the

different government offices. Naturally, this work shows wide differences. Some of it represents the high water mark of our statistical accomplishment, much is of good average quality, and some is unintelligent, misleading, unenlightening. Again, the output of a statistical office does not always exhaust the subject to which it relates. Lack of comprehensiveness in data used as the foundation of legislation affecting business, and the possible presence of imperfections, impose a burden of statistical work upon business interests.

In the past business concerns have, in general, accepted passively the statistical results by which they have been judged, or have replied in irrelevant, non-statistical terms, as by general denials and denunciations. They have been accused of attempting to affect legislation by the exercise of political influence. Moreover, in hearings before government commissions, congressional committees, etc. in which statistics have been involved, corporations have usually left the presentation of their interests in the hands of their legal departments, with the result that pertinent, valid, and reasonably conclusive statistical arguments have sometimes been subordinated to attempts to confuse or discredit witnesses, and generally to "befuddle" the issue.

The policy, or lack of policy, just described has no doubt been due to a blind faith in the government as a source of statistical information, a faith sustained by the high quality of some of the work of the Bureau of the Census, the Bureau of Labor Statistics, and other offices. The attitude of business has been that the government is doing the work, and that duplication is superfluous. This policy is not followed with respect to other types of governmental activity. An inquiry as to whether or not a given combination of interests involved a violation of the anti-trust law would not be left wholly to the office of the Attorney General. The problem would be studied with care by the lawyers of the companies affected. The statistical offices of the government are no more infallible than its legal offices.

In the future, business concerns will find it to their advantage to retain the services of statisticians who will follow up the statistical activities of governmental organizations which have

a bearing, direct or indirect, upon business interests, and will initiate inquiries in the business field with a view to influencing public opinion and action. This aspect of the statistical activity of business organizations will consist in separating the statistical wheat from the chaff, and in doing every thing possible to augment the supply of wheat. Some of the work will be carried on by single corporations, and some by associations of corporations having a common interest.

Already there has been some development of activity in this field. An example is the work of the Bureau of Railway Economics which "was organized in 1910, for the purpose of studying scientifically the various problems with which the railways are concerned and preparing studies and statistical compilations for the use of the railways and for general distribution." Statistical data are compiled, also, by trade associations, chambers of commerce, etc., but the gathering of statistics by such organizations is usually subordinate to other activities, and the results are seldom brought into direct relation with those obtained by the government. The Iron and Steel Institute is an example of an association collecting and compiling statistics.

Classification of Work: Procedure.—Classified according to procedure, the work to be done will include: (1) a careful scrutiny of statistics affecting business compiled by government agencies, (2) the making of studies in the business field parallel to those made by the government, (3) the utilization of existing statistics concerning questions at issue, and (4) the searching of the entire statistical field for data bearing on the relation between business and the government.

To say that government reports should be scrutinized and verified is not a reflection upon the competency of the persons preparing them. Any important statistical inquiry, as, for example, the determination of the trend of prices, involves a multitude of technical decisions. Upon many of these matters there may be differences of professional opinion.

The scrutiny of a statistical report means much more than a checking of the arithmetic, though this is sometimes useful; it involves a review of sources and of methods, including the collection of information, tabulation, interpretation, and pres-

entation. Unanticipated results may sometimes be obtained by taking the raw material of a study and treating it by methods differing from those employed by the official statisticians.

It is well to emphasize the value of this phase of the activity of private interests. Inaccuracy and inconclusiveness are among the most serious faults of statistical work. It seems that too many people are compiling and interpreting statistics as compared with the number who are scrutinizing, testing, verifying, and when necessary condemning the output. If a given statistical product is sufficiently voluminous, laborious, and intricate, it is quite likely to be taken at its face value because there is no one whose business it is to work it through or think it through in a critical way. Verifying a report intelligently and conscientiously may require as much labor as was contributed by the person who prepared it.

Scrutinizing and reviewing reports will be, perhaps, the most significant and useful external activity of business statistical offices. But the work of these offices will not stop with this. Inquiries bearing upon business problems can often be initiated at the same time by the government and by the interests directly affected; an inquiry by a business concern may sometimes anticipate that by the government and, if the inquiry is careful and the presentation is full and clear, may do away with the necessity for an official investigation.

Classification of Work: Presentation.—With respect to presentation, the statistical activity that is being considered may be expected to take at least three forms, as follows: (1) reports to the officers of a company, for their guidance and information regarding a given situation, in order that they may decide what policies are desirable and practicable, (2) statements to be published in newspapers or periodicals, as contributions or as advertisements, for the information of the public and the shaping of opinion, and (3) reports or statements direct to governmental bodies, in the form of testimony or memoranda.

In all three types of presentation, but especially in the first two, the graphical method will be used.

In presenting statistics to governmental boards or committees, in the form of testimony, there will be occasion for cooperation with the legal departments of corporations. To some statisticians and accountants it may appear that the intervention of lawyers in such cases is unnecessary, but it must be borne in mind that the machinery of governmental hearings is organized upon a legalistic basis, that many of the members of committees and commissions are themselves lawyers, and that some of the interests involved are usually represented by legal talent. This being so, it is probably inadvisable to proceed without legal aid, though the statistician will supply the subject matter, and should be able to bring about modifications in the way in which it is presented.

Effect of Work on Interests of Public.—The statistical work described will benefit the private enterprises by which it is supported; it will also contribute to the public welfare. It will benefit the public in two ways: first, by helping to establish the truth concerning questions of importance, and, second, by contributing to the advancement of statistical science.

The work will be competitive—in a sense, controversial. This fact will make for reliable results. The certainty that the product of a government office will be subjected to thorough examination will constitute a powerful incentive to painstaking and intelligent workmanship. The statisticians of business concerns, in turn, will realize that their findings will be carefully scrutinized. Much of their output will be critical, and the critic, above all others, must be sure of his facts and of his processes.

In seeking to establish the truth as to questions at issue, statisticians of business organizations will apply and test statistical methods. New devices and procedures will be developed, and these will be of value not only in the business field but in all the sciences.